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UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

Distr.: GENERAL
E/ECA/CM.13/10
9 March 1987
Original: ENGLISH

ECONOMIC COMMISSION FOR AFRICA

Eighth meeting of the Technical Preparatory Committee of the Whole

Addis Ababa, Ethiopia
13 - 20 April 1987

Item 6 of the provisional agenda*

ECONOMIC COMMISSION FOR AFRICA

Twenty-second session of the Commission/ thirteenth meeting of the Conference of Ministers

Addis Ababa, Ethiopia
23 - 27 April 1987

Item 5 of the provisional agenda**

LG/NAIROBI

INTERNATIONAL YEAR FOR THE MOBILIZATION OF FINANCIAL AND TECHNICAL RESOURCES TO INCREASE FOOD AND AGRICULTURAL PRODUCTION IN AFRICA

* E/ECA/TPCW.8/1

I. INTRODUCTION

A. The food and agricultural crisis in perspective

1. Over the last two decades, Africa has gradually lost its ability to feed its population and finance its investment for its agricultural sector. It is increasingly depending on industrialized countries for its needs. At the same time, earnings from major export crops have drastically fallen while external debts of many African States have multiplied over the last decade. Sub-Saharan Africa is the poorest part of the world's economy, the only region where the rate of growth of population is increasing and where average per capita income is likely to continue to fall during 1985-1995, involving an estimated fall in per capita GDP of 0.7 per cent. 1/ The logical question, therefore, is whether there is any hope for the people of Africa? The answer is "yes" provided, of course, that African Governments and people are prepared to meet the challenge. A look at Asia will, to some extent, place Africa's problems and challenges in a clearer perspective than the gloom-laden predictions taken in isolation.

2. In the early 1960s, India was in the same plight as sub-Saharan Africa today - it was unable to feed its population. But today, India is self-sufficient in grain and actually donated 100,000 tons of grain to African countries in 1985. It has over 17 million tons of grain in storage and is exporting wheat. Although India still has a large proportion of malnourished people, it has shown how a consistent set of pro-agricultural policies supported by complementary investments in rural roads, irrigation research, and the development of a new system of agricultural universities has contributed to a fundamental transformation of agriculture. Of course, there are major structural and socio-economic differences between India and Africa, but the comparison does highlight Africa's physical potential which can enable it not only feed its 450 million people but also generate enough foreign exchange and sustain employment in other economic sectors. 2/ The issue is how to exploit this potential. The current crisis provides the catalyst for a long overdue re-examination of agriculture's role in African development.

3. The serious food and agricultural situation in Africa has been reflected in various forms: in some countries, especially in the Sahelian zone, large human and livestock populations have been displaced. Many countries of the region which once were net exporters of such commodities as palm oil, cocoa, sisal, groundnuts and cereals have either lost ground in the world markets or have become major importers of these commodities. Other countries which were once the breadbaskets of Africa, now survive mainly on food imports. Indeed, international assistance to Africa has reached a point where per capita aid levels are the highest in the world. The 1985 aggregate food aid requirements of the 21 countries with acute food shortages were estimated at 7 million tons (up from 5.3 million tons in 1983-1984.

4. However, with improvements mainly in weather conditions, growth in food production in 1985 and 1986 combined was more than 8 per cent 3/ thus reducing the food aid requirements in sub-Saharan Africa estimated at 1.21 million tons of cereals in 1986-1987. Despite this overall improvement, localized but nevertheless serious food problems still linger on in Africa with some seven countries still facing abnormal food shortages.

5. The dramatic slowdown in per caput food production and the value of agricultural exports (both of which grew at -1.040 per cent in 1980-1985 and -3.996 per cent in 1980-1984 respectively) has had serious consequences: high and escalating food prices, mounting debts and debt-servicing problems and widespread poverty and malnutrition. It has been estimated that more than 150 million people in Africa suffer from hunger and malnutrition. 4/ Of 39 countries in Africa with per capita DES 5/ below minimum requirements in 1969-1971, as many as 28 still had a per capita DES below minimum requirements in 1979-1981. 6/

6. The main causes of the crisis are well known. This paper highlights only the salient factors. While drought, floods and other natural disasters in 1969-1973 and 1981-1984 brought the crisis to the open, and population growth adds to pressure on resources in specific areas, the main immediate causes are the policies and development strategies (both national and international) which have denied agriculture its priority place as an engine of development. 7/ Underlying these is the interplay of a number of deep-seated factors - political, social, technical and economic (especially the energy price changes and the global economic recession) - which have been working over the longer term. Many African States have pursued extractive policies because of the misunderstood role of agriculture in national development and this has resulted in unfavourable terms of trade, insufficient funding and a high burden/benefit ratio in the agricultural sector.

B. Need for medium- and long-term actions

7. Africa's food crisis is part of an overall agrarian crisis which is manifested in malnutrition, poverty, underdevelopment and growing food dependency on industrialized nations. To end hunger and poverty, governments must bring about a fundamental reordering of short-, medium- and long-term development strategies in favour of agriculture. Donors also have an integral part to play in helping to solve Africa's agrarian crisis, through re-examining the role of aid, making fundamental reforms in donor assistance and strengthening indigenous African capacity in the development and application of science and technology to tackle the major problems of African agriculture: low productivity, fragile ecosystems, limited land and water resources development, poor management, extensive crop and livestock diseases, high food losses and weak delivery systems. (The short-term food emergency programmes, although essential for immediate survival, are beyond the scope of this study).

8. This paper concentrates on three critical problem areas:

(a) Strengthening indigenous scientific manpower;

(b) Strengthening national technological and research services in order to generate and diffuse more technology within Africa and rely less on technology transfer; and

(c) The mobilization of domestic and international financial resources to assist African agricultural development.

9. The first two areas have been neglected by African States and donors alike because they have over-emphasized direct technology transfer and the overseas training of agricultural scientists, and investment in international

agricultural research centres. Twenty-five years is the minimum period for building and strengthening Africa's core institutions and mobilizing science and technology for African agriculture.

C. An international year for Africa and the challenge

10. World attention is focused on Africa because of the devastating famine and poverty. The nature and dimension of Africa's crisis has captured the interest of the whole world as never before and hopefully, never again. This report seeks to encourage the international community to mobilize resources to combat African hunger and poverty.

11. Its major concern therefore is to elaborate action-oriented proposals in respect of an international year for the mobilization of financial and technological resources to increase food and agriculture production in Africa (or the International Year for Africa - IYA) which has been proposed for 1991 by the United Nations General Assembly. Although 1991 might be designated the International Year, this should however be regarded as the target year for the celebration of activities which should commence immediately, and also act as a pivotal year for launching the long-term remedial plans over the next two to three decades. Such is the urgency of Africa's agrarian crisis that the preparation for mobilization should not be delayed.

12. The United Nations General Assembly, in adopting resolution 38/198, noted with alarm the gravity of the food situation as evidenced by a drastic decline in self-reliance in food. The General Assembly is fully aware that foreign assistance can play a critical role in third world development if additional resources are also mobilized at the same time. And the Assembly also recognizes that technological stagnation in Africa has direct relationships with declining agricultural productivity which is aggravated by natural factors such as drought and desertification. This report examines in greater detail the technological and financial problems in African agriculture and proposes an action plan for helping African States to redirect policy attention to agriculture, to mobilize more internal resources for agriculture and to provide an economic policy environment conducive to the more effective absorption of foreign assistance.

13. The report also takes account of Africa's Priority Programme for Economic Recovery (APPER), 1986-1990 2/ and the United Nations Programme of Action for African Economic Recovery and Development (UN-PAAERD), 1986-1990 2/ in which African countries with the support of the international community commit themselves to invest greater resources in the agricultural sector and introduce policy changes and necessary structural adjustments which would make them less vulnerable to future emergencies as well as lay the foundations for self-sustained economic growth and development.

II. THE PROBLEMS OF TECHNOLOGICAL DEVELOPMENT IN AFRICA

A. The role of technology generation in African agriculture

14. Despite enormous physical production potential, the rate of growth of food production in Africa since 1970 has been only half the rate of growth of population. Three decades of historical experience in the third world has shown that no single factor - capital, weather, population or technology - by itself can explain agricultural change or stagnation. But there is

widespread and consistent empirical evidence that technological change is one of the four or five prime movers or strategic components of modernizing agriculture.

15. One may start by focusing on a central element of technological innovation, namely crop research. Advances in this field have had such dramatic consequences in Asia that, in the face of the African crisis, any serious analysis of the role of technology in redressing the situation in Africa has to take account of it. This is explored further in section B below; here it is sufficient to note that within six years (1960 to 1966) the International Rice Research Institute (IRRI) produced a new rice variety (IR-8)that dramatically increased yields in the Philippines, India and other Asian countries. In the same decade new wheat varieties from the International Wheat and Maize Improvement Centre in Mexico enabled India to double total wheat production in eight years - a remarkable achievement that no other major country in the world has matched.

16. Criticism of the Asian green revolution has centred on its economically and socially differentiating consequences - although recent research has shown that both small and large farmers in general adopted high-yielding seeds at more or less equal rates, with similar gains in efficiency. The more pertinent criticism is that the quantum leap achieved in Asia is peculiar to the advanced, highly intensive peasant farming culture which has evolved on that continent over generations. But those who doubt the wisdom of tackling the challenge of Africa through a sufficient investment in technology have to face up to three important considerations - the global record of returns on such investment; the historical role crop research has played in Africa; and the potential for an incremental change via broad technological adaptation that agriculture in Africa offers. What is pre-eminently required is the vision to back this up and follow an effective strategy through, not just over one or two years within the confines of a narrowly defined project, but over the long term. These arguments are briefly reviewed.

17. There is common agreement today that agricultural research is a profitable investment activity. More than 50 empirical studies of the rate of return on investment in agricultural research are now available from industrialized countries and from Latin America and Asia. These studies consistently show that the rate of return on investment in agricultural research is high - between 40 and 60 per cent. What is surprising is that the 50 studies of rates of return on agricultural research do not include any samples from Africa.

18. Four important insights emerge from the African historical record. First, improved varieties of cotton, groundnuts, oil palm, coffee and tea helped open up Africa's rural economy and provide economic opportunities for millions of farmers. For example, there are today approximately 18,000 smallholders producing tea in Kenya. Second, the green revolution type of breakthrough was achieved in oil palm in Zaire in the 1960s, in hybrid maize in Zimbabwe in the 1950s and in Kenya in the mid-1960s respectively. Although these important breakthroughs have not been widely publicized in the scientific literature or popular press, they do illustrate the role that long-term agricultural research can play in producing new technology from within Africa. Third, the historical experience indicates that with the exception of hybrid maize research in Zimbabwe (1932-1949) and in Kenya (1955-1964), most research during the colonial period concentrated on export crops. Fourth, the empirical record shows that the average period of time from the inception of research to the release of new technology is about 10 years. Hence, the time span

for agricultural research to meet today's agrarian crisis requires long-term investment programmes and long-term and consistent support from both African States and donors.

19. There are further insights which can be derived from this brief review of developments within Africa, which relate particularly to the development of food production. Post-colonial governments have continued past emphases in agricultural research - with some diversification - but the agricultural research systems have been weakened by the absence of strong lobbies demanding effective research. The small farmers have by and large been badly organized and have limited access to political power. Resource-rich farmers have often seen farming as an extension of their mercantile interests, aiming at short-term profitability rather than long-term viability. Existing research systems are often now in need of rehabilitation.

20. These considerations underline the conclusion that not only are long-term commitments to technological development in Africa feasible and worthwhile, but also that they need to be based on African conditions - the situation of the vast mass of Africa's producers on the land, and that continent's specific and multifarious variations of culture and ecotype. This raises the question of how far technology transfer is an option for achieving fundamental progress in African agriculture.

B. Technology transfer: theory and practice

21. When 16 African States won their independence in 1960, there was great optimism about bypassing stages of development and catching up with industrialized States. Technology transfer played a central role in fuelling the expectations that African States could adopt technology to modernize both its industry and agriculture within a relatively short period of time. Hence, at independence, it is natural that African States and donors turned to technology transfer and imported improved crop varieties and livestock breeds to modernize agriculture.

22. The theoretical case for technology transfer is straightforward. There is a proven payoff to scientists working in research teams, task forces and institutes. It is assumed that the output of these research groups - improved technology - can be transferred through the public and private sectors to clients in other geographical settings. Because of the small and often times misallocated pools of trained agricultural scientists and the poor conditions under which they work in most African countries, the concept of importing ready-made technology is an attractive proposition. Tied aid also encourages importation of foreign technology.

23. An analysis of technology transfer in practice has shown that numerous plant breeders - e.g., oil palm, cotton, maize - have benefitted from imported technology over a span of many decades. But in many countries there is a gap between technology transfer in theory and in practice. Many of the International Agricultural Research Centres (IARCs) operating in Africa have concentrated mainly on the direct transfer of improved plant varieties and have not spent as much time as on capacity transfer - i.e., helping national research services and universities develop their own scientific capacity to screen and borrow technology as well as to adapt it to location specific environments and to attract and retain national trained manpower.

24. It remains the case that most donors have seriously underestimated the variability in African agriculture and the indigenous science capacity required

to achieve the full potential of borrowing technology (via transfer) from the global research system. The uncritical acceptance of the direct transfer of technology creates the comfortable illusion among many donors that it is both possible and feasible to circumvent the long, arduous and costly process of strengthening applied basic research capacity within national agricultural research services and in African universities. But Africa's experience with this form of technology transfer in the last 25 years as adds further evidence to the well-established conclusions that only a country that establishes its own research capacity in agriculture can gain full access to the advances in knowledge that are available to it from the global scientific community and embody that knowledge in the technology suited to its own resources and cultural endowments.

25. In summary, importing technology is critically shaped by the stage of economic history of a particular nation. At this stage of Africa's development, the gap between technology transfer in theory and practice is partly a function of limited administrative, managerial and indigenous scientific capacity. Unfortunately, long-term support for strengthening indigenous scientific capacity is receiving low priority by most African States and by donors who are, for the most part, locked into conservative three- to five-year project cycles.

26. One of the common perceptions among donors is that there is a backlog of farmer-tested technology on the shelf in Africa and that the challenge is how to disseminate this technology to farmers. As regards food crops, the evidence shows that with the exception of maize in Eastern and Southern Africa, hybrid sorghum in the Sudan and the development and popularization of cassava varieties and streak-resistant maize in some parts of West Africa, there is little farmer-tested on-shelf technology waiting to be extended. There is also growing evidence that the genetic resources base is being depleted in export crops, notably cocoa, oil palm and rubber. This erosion is partly a function of shifts in research priorities to food crops, but also partly because of the lack of experience of Africa's young scientists.

C. Implications for technology generation within Africa

27. In the 25 years since independence, much has been learned about agricultural development and the role of science and technology in the transformation of African agriculture. There is consistent empirical evidence that technology transfer - especially biological and chemical - has been oversold and technology generation within Africa has been undervalued by African States and by donors. Moreover, many African States have been unable to exploit technology transfer because they lacked a critical mass of resources and well-motivated agricultural scientists to screen and transfer technology from neighbouring States, regional research networks and from the global research network. Technology transfer, although an important component of agricultural development in Africa, should not be solely relied upon to solve Africa's agrarian crisis.

28. It has been pointed out that under conditions of rapid population growth, and the closing of the frontier, there is need to step up expenditure of agricultural research within Africa in order to generate a continuous stream of agricultural technology for the intensification of agricultural production. The 25 years of independence has also shown that agricultural policy makers in Africa should not sit back and assume that the 13 IARCs will supply African

States with new technology. Although the IARCs have role to play in the global system, they are not a substitute for a strong national research service. The overall conclusion is that greater attention will have to be given to strengthening Africa's indigenous scientific capacity for technology.

29. The implications for African States and donors are clear. Investments in both food and export crop research, especially in the former, for the broad range of rural producers will have to be dramatically accelerated in most African States. Without indigenous agricultural research producing a continuous stream of new technology, the race between the growth of food production and incomes and the growth of population in Africa will not be won.

III. REQUIREMENTS FOR TECHNOLOGY GENERATION AND DIFFUSION WITHIN AFRICA

A. Choices to be made

30. Since research is an activity with a long gestation period, some hard choices need to be made on research priorities. It is argued here that commodity research - on food and export crops - should receive high priority because this type of research has the capacity to generate new income streams and rural employment. Supporting research on land, moisture, water conservation, investment in rural infrastructure and extension are also needed to facilitate the introduction of adapted farming systems, effectively supported by technical developments in crops and livestock.

31. The balance between basic science research, applied research, farming systems research and farmer-led research will depend on circumstances. However, in all cases, major attention will have to be given to keeping the scientists and farmers involved in different types of research in collaboration with each other. In most cases only applied research has received much attention. The limitations on technology transfer have already been mentioned in section II. Choices must be made about the forms of research too. In the past, research has focused on pests and diseases. Although agronomic research on food crops was stressed, it tended to neglect practical farming considerations of resource-poor, risk-prone farmers such as labour availability and inter-cropping. Mechanization, harvesting, storage and economic aspects also received inadequate attention. 10/ More importantly for Africa, the whole question of how communities can use resources has too often been omitted from research agendas.

32. This paper argues that the sustainability of production systems has been neglected. Emphasis has been on the individual farmer (whether rich or poor) and there has been little consideration of the way resources will have to be managed from a communal - national or regional - point of view. Too short-term and profit-oriented a view of production systems and research has been adopted. Generating sustainable systems requires a combination of the four types of research mentioned above. In practice, since most countries have already some plant selection and breeding capacity, priority should now be given to basic and applied research in soil and water dynamics and management, appropriate mechanization, mixed farming especially the draught animal issue, inter-cropping and rotations, organic fertilization, integrated pest management, development and introduction of appropriate varieties (including drought-resistant varieties) and measures to combat desertification. It is clear that basic research will be largely ineffective without the critical mass of scientific personnel and financial resources that may lie beyond a

country's capacity. Regional collaboration is certainly needed. Any regional research programmes will have to find ways by which any member country will feel that it has sufficient power and control to ensure that its priorities and problems are addressed.

33. However, among the most serious problems limiting the effectiveness of research in Africa are the weak delivery systems which fail to ensure that technology packages developed at the research centres reach the farmer so that they can be adopted and applied. This reinforces the need for more efficient delivery systems and better research. The weak linkages between research, extension and the farmer critically retards the development and diffusion of technology so imperative to progress.

34. More difficult choices concern the target groups for research investment. Given the importance of resource-poor farmers in all African countries, greater attention than at present should be paid to investments in research which is specifically targeted on the problems of resource-poor farmers. Even basic science research topics (e.g., soil dynamics) need to reflect some of the major problems faced by small farmers (including women).

35. Given the past bias of research on high potential areas, the distribution of poverty and vulnerability to hunger, it is logical to focus greater investments in the remoter, marginal agro-ecological zones, which nevertheless support substantial populations. These considerations call for a rethinking of technological policy so as to focus attention and resources on these areas - some of which have either been neglected in the past or have not received adequate emphasis.

B. Stepping up basic research in Africa

36. During the last two decades, donors have commited generous support to the IARCs. And donor investment in applied research in the IARCs and national research services will probably total several billion dollars over the period 1980-2000. Despite the fact that most of the IARCs are based and operating in Africa, only the International Laboratory for Research on Animal Diseases (ILRAD), the International Institute of Tropical Agriculture (IITA) and to some extent the International Livestock Centre for Africa (ILCA) are committed to basic science research. While the other IARCs are concentrating on applied research and shorter term studies, ILRAD is concentrating on long-term research on two livestock diseases, trypanosomiasis and theileriasis (East Coast fever), that principally affect cattle in Africa.

37. The almost exclusive support for applied research and modest investment in basic science research in African universities and research institutes by donors assumes that technology transfer and applied research are adequate to solve problems of African agriculture. But the technical problems which beset agriculture in the region are such that only concerted and interactive efforts in long term basic science and applied research can effectively deal with these problems. Although IITA, ORSTOM and IRAT programmes in West Africa give attention to basic soil research as they relate to crop husbandry practices, it is evident that research on low soil fertility and water resources development and management are some of the areas which require inputs from basic science research. In fact, a need is already felt to strengthen soil research in Africa. The solution of the African food and agricultural crisis also requires research and better knowledge of agro-climatology. Apart from the activities of the above-mentioned research organizations, the contributions

of SAFGRAD, ICRISAT, WARDA, etc., should be noted. In particular, the work done by ICIPE in integrated pest management and immunology is of great importance and needs to be fully supported.

38. The International Year for Africa (IYA) provides a good opportunity for assessing the state of the art of basic and applied science research in support of agriculture in the region, the adequacy of basic science research in the IARCs, national services and universities in Africa and the transferability of basic science ressing thetput from the industrialized countries to agricultural research institutes in Africa. Results of such studies would guide donors on the mix of basic science and applied research for the next 20 to 25 years. It must be mentioned, however, that some of these activities are already underway in the SADCC countries under the co-ordination of the Southern Africa Centre for Co-operation in Agricultural Research (SACCAR) based in Botswana.

39. One caveat about basic science research is that it is often remote from urgent problems in the field. University researchers are typically isolated. A greater effort needs to be made to associate basic with applied researchers and also with technology users. Lessons could be learnt from the study of successful organizations in this respect such as the Institute of Agricultural Research, Samaru (of Ahmadu Bello University, Nigeria).

C. Strengthening national agricultural research systems

40. As a measure to strengthen the agricultural research systems, African countries should collect, store and test indigenous plant genetic materials and livestock in addition to adapting technology developed outside their countries. In some fields there may be no technology to import in ready-made form (e.g., soil conservation, organic fertilization), and in others there may be no reason not to use local material.

41. Also, there is a great need for research station scientists to be directly involved in on-farm activities and for farmers to play a role in research. Farmers should be involved in helping to set the agenda for research, and in carrying out some of the on-farm trials. More research should be carried out on farm rather than at station, given the great variability of natural and socio-economic conditions from one micro-area to another. Farmers can be involved in activities of local experimental stations.

D. Training to strengthen indigenous scientific capacity

42. Whereas much attention has been paid to Africanize the civil service, industry and commerce, much less emphasis has been given to Africanization of universities and research organizations. The result is an acute shortage of African scientists, managers and academic staff in schools and faculties of agriculture, and excessive reliance on foreign technical experts.

43. Donors are aware of the acute shortage of African scientists and managers. But the present practice of sending a large number of African students overseas for post-graduate training can only be a second-best approach in meeting African manpower needs in the agricultural sector since only a surprisingly small number of such students undertake research on African problems during their study programmes. For post-graduate training to be of relevance to African agriculture, it must be pursued in an environment which poses problems and challenges similar to the African experience.

44. Within this context, emphasis must shift the training of African scientists and managers in agriculture at MSc and Ph.D levels from industrialized countries to Africa. Post-graduate training should also emphasize practical work and field tasks and researchers' career structures should formally reward field work. Now is the time to effect this change. However, before donors continue with investment programmes to increase scientific and managerial capacity for agricultural development in Africa, the question of higher education in Africa should be examined in depth in a regional study during the IYA. Specifically, data need to be generated on the direct and indirect costs of training students at home compared with the cost of training them overseas.

E. Promising directions for investment research building on existing success

45. There are many promising, but relatively neglected avenues for development, in addition to those commonly being explored already. It is not possible to make a complete inventory of these for different physical or socio-economic environments because experience in Africa remains substantially uncollated. The first priority for research would be to identify the four basic agricultural/food producing situations such as set out below:

(a) Closed productive forest/export crop economy;

(b) Wet savannah;

(c) Dry savannah/semi-arid areas; and

(d) Agro-sylvo pastoral situations.

The next step would be to piece together from secondary sources and from empirical research a picture of available tested or promising technologies. A related task is to work out what factors are responsible for the existence of those research and development organizations which have been or could be relatively successful in the African situation and to communicate the results of both studies widely in the region.

1. Crop and livestock improvement

46. National plant and animal breeding programmes are of course a high priority. However, greater emphasis now needs to be placed on the adequate and continuous assessment of the problems of poor African clients. The delivery system, particularly extension services, should be strengthened to effectively identify and bridge the communication gap between researchers and the farmers. The basis for breeding needs should be shifted substantially from collection and screening of exogenous material to the improvement of local material and breeds. Seed and livestock banks established with the co-operation of farmers and herders are long overdue. The cultivation of multi-purpose tree species can also improve the yield of most arable land as well as that of livestock.

2. Soil quality maintenance and improvement

47. There are opportunities at the farm level for greater emphasis on soil management. Tillage practices, including minimum tillage techniques and adaptation of practices to animal power are important to soil structure and the ability to prevent erosion. Green manuring, the planting of cover crops, and mixed farming are often neglected aspects of soil enhancement and require

both technical and socio-economic studies. Again, farm-forestry has the potential for both income generation, and soil improvement and protection as fuel prices rise. At the community level, the problem of soil erosion and degradation can be tackled by encouraging communities to undertake environmental conservation and community forestry programmes. The establishment of clearer rights in land and the use of food for work programmes can provide proper incentives for mobilizing support for the purpose.

3. Moisture and water conservation

48. Since many of Africa's problems of low yields and erratic production are a result of drought - inadequate or poorly spaced rainfall - special attention is needed for moisture conservation measures. This is true even in higher rainfall areas where tropical storms lead to excessive runoff and erosion.

49. In view of the increased food security which irrigation can provide, small- and medium-scale irrigation, whether from surface or groundwater sources must see increased investment: this can be done in the medium term. A more cautious approach to large-scale irrigation is advocated, given the difficulties of management, the cost and the tendency of large-scale irrigation schemes to displace well-adapted land uses. However, the prima facie case for larger scale irrigation in semi-arid areas is overwhelming. Research is needed to reduce the costs and increase the manageability of large-scale irrigation.

50. Water pumps using solar, wind, biogas, animal and human power have to be popularized. The technologies are available. It is a question of applying these technologies for water/moisture conservation and improved management of water resources.

4. Technologies for storage, transportation and commercialization

51. Technologies for food storage, transportation and commercialization, developed by groups working on appropriate technology, are also available, but little use has been made of them for improvement of the situation. It is well known that nearly 15 to 30 per cent of food produced hardly reaches the consumer because of losses and the problems of storage, transportation and commercialization. Adequate measures, including development of local technologies, are essential in facing these problems.

F. Changes in technology and management

52. The changes in technology and management required to sustain agriculture and livestock production in much of Africa are significant. The challenge is not only to develop the technologies to fill the "production gap", but to develop relevant research systems. These systems would then need to generate technologies which have perceptible benefits to farmers and herders, or to subsidize their introduction, or to restructure incentives so that they do bring rewards. As far as possible increasing land productivity must not be at the expense of labour productivity: the two should ideally go hand in hand. This will not be possible in all cases, so Governments and donor agencies must be prepared for substantial subsidization and/or economic restructuring. Food for work programmes are one form of the latter.

53. Sustainable food and agriculture development in Africa also requires the constructive management of natural resources. At present the State plays

a nominal role in resource management in many cases; communities are rarely expected to play a strong role. States should provide the legislation and administrative framework within which formal control of resources can be delegated to resource users.

54. The reasons for seeking more domestic and international financial resources for science, technology generation and agricultural training within Africa should now be apparent. Considerable and long-term support would be required to tackle the massive problem of re-orienting and greatly strengthening Africa's agricultural research and production systems, develop and strengthen Africa's indigenous scientific and technological capability and bring about a transition from an extractive to a regenerative agriculture.

IV. FINANCIAL RESOURCES FOR AFRICAN AGRICULTURE

A. Past trends

55. This section is concerned with the future financial requirements for sustained agricultural recovery and growth in Africa. Financial resources are treated here in their widest meaning to include both domestic and external flows of investment into the agricultural sector, and also to include the finance required for importation of agricultural inputs and food aid. Special attention is given to Official Development Assistance (ODA) because the types of assistance needed (to support research, training, the provision of physical infrastructure, food security) are not attractive for private investment. This section looks, in turn, at the causes of the severe resource gap confronting African agriculture, recent trends in external resource flows and their adequacy, and future financial requirements for medium- and long-term agricultural sector initiatives.

56. The consideration of future financial needs must be placed in the context of previous trends. It is now widely acknowledged that the agricultural sector in most of Africa was relatively starved of financial resources throughout most of the past two decades. This applied both to public and private finance, as well as to domestic and external resource flows. The share of government development expenditure directed to agricultural sector investment was typically very low compared to the sector's shares of population and gross domestic product. Thus, in the mid-1970s, the share of agriculture in public investment ranged between 15 and 20 per cent for many African countries with shares of the population in agriculture of up to 80 per cent and shares of agriculture in GDP of up to 60 per cent. The same was true of government recurrent expenditure in agriculture which on average was only 5 to 6 per cent of total public recurrent expenditure in the early 1970s, and which declined steeply in real terms at the turn of the 1970s. The low share of agriculture in ODA financial flows is considered further below.

57. The relatively low volume of financial flows into agriculture is not the only problem now recognized with past practice. The wisdom of the uses to which a large proportion of resource flows were put has also been placed in doubt, as also have the institutional structures through which governments interacted with their farmers. In particular, it is considered that past resources were unduly directed to large-scale and prestigious agricultural projects at the expense of small farmers, and that government interventions in the pricing and marketing of agricultural output created severe disincentives

to production growth by small farmers. This is not to suggest that all resource flows into agriculture had negative effects, but rather that the relative emphasis on scarce resource utilization failed to achieve the conditions for the sustained development of the small farm sector which is the core of the agricultural economy in most African countries.

B. Causes of the crisis in financial resources

58. Africa confronts a crisis of financial resources which has been increasing in severity since the early 1970s and which has in part exacerbated the agrarian crisis and made it extremely difficult for any African Government to implement effectively, essential reforms in policies in favour of agriculture.

59. The causes of the widening deficit in financial resources are several, and have both external and domestic origins which escalated during the 1970s and especially in the early 1980s with the onslaught of the drought. The declining agricultural production of the 1970s resulted in lower foreign exchange earnings from agricultural exports and higher import bills for necessary food imports. This worsened the balance-of-payments position of most African countries already pushed into deficit by the external factors resulting from oil price increases and international inflation in manufactures. As prices of most agricultural exports declined after 1980 while import prices continued to rise, African countries witnessed a large deterioration in their external terms of trade.

60. These and related events have had serious repercussions on Africa's external debt which between 1974 and 1984 multiplied sevenfold reaching $US 145 billion in 1984 and $US 200 billion by the end of 1985. 11/ The cost of servicing this debt is estimated at between $US 14.6 and $US 24.5 billion annually while the ratio of debt service to exports reached 30 per cent in 1984, a fourfold increase from 1974. 12/ The existence of debt problems of this magnitude means that a large and growing proportion of Africa's available financial resources must be diverted to servicing past financial obligations rather than investing in agricultural recovery programmes or promoting new productive activity. Clearly, an important component of the discussion of future financial resources will be the need to review with care the debt obligations of African countries.

61. An important factor which exacerbated the decline of agricultural production in some African countries was the maintenance of overvalued exchange rates. These resulted in much too low domestic currency equivalents of international prices for both export and food crops. In some cases they also resulted in the growth of parallel markets and in unofficial transfers of crops across national frontiers. It should be noted, however, that the correction of exchange rate distortions is not unambiguous in its impact: it may be self-defeating due to its adverse effect on the prices of agricultural inputs and on the general level of inflation confronting farmers. Thus exchange rate policy cannot be examined in isolation from other instruments of economic policy and in the present context, it cannot be isolated from alternative potential forms of balance-of-payment support.

C. ODA financial flows

62. While debt is one of the most visible financial constraints facing African countries in the mid-1980s, of central relevance both to the future solution

of the debt problem and to the provision of new resources for sustained agricultural recovery is the volume and composition of Official Development Assistance (ODA).

63. Tables 1 and 2 show ODA commitments and net disbursements respectively for the whole of Africa during the years 1979 to 1984. It is remarkable to note that total commitments to Africa continuously declined between 1980 and 1983 (a fall of 3.9 per cent). On the other hand, actual net disbursements of ODA kept fluctuating over the period 1979 to 1984.

Table 1: ODA commitments from all sources to Africa: 1979-1984

(in millions of US dollars)

	1979	1980	1981	1982	1983	1984
Total Africa of which	11 107.1	13 299.1	13 059.4	12 943.7	12 552.6	14 044.3
South of Sahara	8 133.6	9 930.9	9 384.0	9 649.4	9 749.0	10 164.4
North of Sahara	2 792.9	3 266.8	3 474.3	3 064.2	2 542.9	2 906.4
Africa unspecified	180.6	131.4	201.1	230.1	260.7	974.0

Source: FAO, Computerized data bank on external assistance to agriculture, 12.[illegible]86.

Table 2: Net disbursements of ODA to Africa: 1979-1984

(in millions of US dollars)

	1979	1980	1981	1982	1983	1984
Total Africa of which	8 871.6	10 429.6	10 471.0	10 525.1	9 993.5	11 14[illegible]
South of Sahara	6 424.8	7 547.1	7 512.1	7 756.4	7 533.9	7 830.2
North of Sahara	2 254.8	2 710.9	2 751.5	2 557.6	2 237.9	2 358.5
Africa unspecified	192.1	176.6	207.4	211.1	221.7	959.7

Source: OECD's Geographical distribution of financial flows to developing countries.

64. Concerning agriculture, official commitments of external assistance to this sector in developing countries has been generally low - about 24 per cent of total official commitments from bilateral and multilateral donors during 1979-1980 to 1982-1983. 13/ Available data for Africa (table 3) show that such commitments of external assistance to agriculture, excluding technical assistance grants, were not only low but actually fell (in the case of OECD's broad definition of agriculture) from $US 3.4 billion in 1982 to $US 2.8 billion in 1984. This, and also the fact that actual disbursements must have fallen

far short of commitments as is usually the case, demonstrates the extent to which African agriculture has been starved of financial resources over the past two decades.

Table 3: Commitments of official assistance (concessional and non-concessional) to agriculture in Africa: 1980-1984

(in millions of US dollars)

	1980	1981	1982	1983	1984
Broad definition	2 631.5	3 097.5	3 413.3	3 091.0	2 821.8
Narrow definition a/	1 603.9	1 905.2	1 599.7	1 913.7	1 850.7

Source: FAO, Computerized Data Bank on External Assistance to Agriculture; 12.8.86.

a/ The narrow definition of agriculture excludes forestry.

D. Resource requirements and utilization

65. A discussion on resource utilization must, by necessity, precede the estimation of resource requirements since the broad areas for which enhanced real financial resources are urgently needed and on which future effort should be concentrated must first be identified. APPER provides the framework within which any programme of action for the rehabilitation and development of African agriculture must focus on. Within this context and, taking into account the conclusions reached in sections II and III of this report, these broad areas are: (a) increased food production; (b) arable land development and land improvement; (c) livestock and animal product development; (d) mechanization; (e) storage and marketing; (f) agricultural research, manpower training and extension; (g) water resource management and low cost irrigation schemes; and (h) reafforestation programmes and drought and desertification control. Following these, the next in priority is the incentives as well as the strengthening of other sectors that support agriculture.

66. As regards future resource requirements, it is extemely difficult to make accurate estimates, given the complex financial situation faced by African countries at the present time. Emergency relief, either in the form of food aid or in general import support, becomes confused with longer term requirements and mounting debt-service obligations tend to substract from new finances which become available. Fortunately, however, for Africa financial estimates have been made on a country-by-country basis, the total cost of the national priority programme formulated in the context of APPER, 1986-1990. The food and agriculture target for APPER during the five years 1986-1990 has been calculated at $US 57.4 billion or 44.8 per cent of the total implementation cost of APPER. This implies that the broad areas identified above in the food and agricultural sector would require an expenditure of $US 57.4 billion in the coming five years. Of this amount, the African countries have fully commited themselves to make available from domestic sources $US 40.3 billion, leaving a gap of $US 17.2 billion to be supported by the international community.

67. A key element in this paper has been the emphasis on the importance of agricultural research in the development of appropriate technology for food and agriculture in Africa and the necessity for a substantial increase in financial resources devoted to agricultural research. APPER, unfortunately, does not provide any indication of the share of research in the allocation of $US 57.4 billion to agriculture. To provide an estimate of the future financial requirements for national agricultural research systems in Africa in the years ahead, this paper resorts to the conclusions and recommendations of a UNDP/FAO study on national agricultural research in selected developing countries. 14/ That UNDP/FAO study recommends, after a thorough analysis of all relevant evidence, that in order to bring about sustained development and growth in African agriculture, expenditures on agricultural research should reach 10 to 20 per cent of the total funds committed to agricultural development and at least 1 per cent of agricultural GDP. 15/

68. Within the context of APPER, the recommendation that 10 to 20 per cent of total funds committed to agriculture should be devoted to research calls for an investment outlay of between $US 5.74 and $US 11.48 billion in the African national agricultural research systems in the five years, 1986-1990. This represents an annual investment of $US 1.2 to $US 2.3 billion and a fair estimate of the resources required to bring about the necessary reforms in research discussed in sections II and III of this report. 16/ Since the time frame for these reforms to bring about sustainability in development and growth in the food and agricultural sector in Africa is 25 years, it will be necessary to maintain an investment of this magnitude throughout this period.

69. To support an investment of $US 2.3 billion per year which is the desirable upper limit for a technological breakthrough, African Governments would have to make sacrifices including the intensification of services in support of research while increasing the absorptive capacity of this quantum increase of resources through greater linkage between research, extension, the universities and other related services. However, whatever sacrifices Africa is committed to make, it certainly cannot provide all the resources required to lay the foundation for the structural transformation of the agricultural sector and indeed the whole African economies. Therefore, the international year for Africa should provide the international community an opportunity to support APPER.

V. PROPOSALS FOR ACTION PLAN: INTERNATIONAL YEAR TO END HUNGER AND POVERTY IN AFRICA

A. Strategy, principles and programme for the international year for Africa, 1991

1. General considerations

70. Activities during the international year for the mobilization of technological and financial resources for food and agriculture in Africa (or the International Year for Africa - IYA) must have as their basic aim the communication to African policy makers and the international community the extreme gravity of the food and agricultural situation in Africa, together with the awareness that there is a real prospect for betterment, given a concerted effort both within and outside Africa. To this end, the following considerations need to be taken into account:

(a) The IYA should have clear and purposive themes;

(b) Actions should be specifically targeted for the mobilization of resources;

(c) It should create and/or strengthen domestic and international structures which will continue at least for the next decade;

(d) Recommended programmes should be accorded priorities on both subregional and country bases;

(e) An effective system of monitoring and evaluating the flow of real resources into African agriculture over the long term should be instituted; and

(f) Given the locationally specific content, IYA will differ substantially from previous international years, and will require appropriate organizational forms; however, the experience gained in the running of previous international years should be drawn upon.

2. Programming and phasing

71. A four-base process of programming for IYA is envisaged:

(a) Phase I: Planning, 1986-1987

(i) First session of the United Nations advisory committee for the International Year for Africa, 1991;

(ii) Consideration of recommendations by the United Nations advisory committee by the United Nations General Assembly;

(iii) Institution of the international secretariat for IYA;

(iv) Establishment of an international trust fund;

(v) Transmission to Member States of the decisions and recommendations of the General Assembly.

(b) Phase II: Preparatory implementation and fund-raising, 1988-1990

(i) Circulation of detailed guidelines, The Programme of Measures and Activities for the IYA international secretariat;

(ii) Establishment of the national co-ordinating bodies;

(iii) National and international campaign for fund-raising and ODA policy review;

(iv) Establishment of the Africa subregional liaison committees;

(v) Institution of surveys and studies in agricultural policy;

(vi) Preparation for the strengthening of agricultural research and manpower training capacity in Africa, and collaboration at inter-State and international levels;

(vii) Preparation of agendas for action, medium and long term, by national co-ordinating bodies;

(viii) Review of priorities, and elaboration of regional programmes by Africa subregional liaison committees;

(xi) Monitoring and evaluation of progress by the United Nations advisory committee.

(c) Phase III: Celebration of the International Year for Africa, 1991

Institution of medium- and long-term programmes.

(d) Phase IV: Monitoring and evaluation of progress, 1992-2000

3. Preparatory activities

72. The year 1991 will be the actual year for celebration; however, it should be viewed as the target year for the achievement of a number of preliminary objectives. Preparation for these should begin as soon as is feasible. These may include:

(a) Commitments by African Governments to solve the problems of the food and agriculture sector by way of policy reforms and allocation of resources. This commitment is already reflected in APPER;

(b) Policy statements and resource commitments by major donors reflecting radically revised strategies of ODA for African agriculture;

(c) Surveys and studies on aspects of agricultural policy which should include recommendations on improving food and agricultural production:

(i) Local and regional commodity and consumer goods pricing strategies;

(ii) Early warning systems and food storage policies;

(iii) The design of monitoring systems on the flow of resources to agriculture on a country-to-country basis;

(iv) Rural transport performance studies;

(v) Identification of marginal agro-ecological zones, and the need for new or adapted land-use systems;

(vi) The examination of 'success stories' in key areas of long-term production sustainability, with a view to replication and extension;

(vii) Investigations of effective measures for the involvement of farmers in the conception, practice and application of research;

(d) Commitments by African States to guidelines and effective systems for the monitoring and evaluation of the real resource flow into agricultural sectors;

(e) Strengthening of new agricultural research capacity in Africa and the re-orientation of existing research programmes;

(f) Expansion of high- and medium-level manpower training facilities in the area of agricultural support within Africa;

(g) Strengthening of collaborative arrangements between training and research institutions both within Africa and between Africa and other participating nations;

(h) Studies of debt service problems, with feasibility analyses of debt collection; and

(i) The commencement of adopter schemes, whereby community groups, schools, farmers' clubs, etc., amongst participating nations undertake a programme of support for a designated African farming community.

4. Staffing and funding

73. In view of the long-run build-up to 1991, particular attention needs to be paid to the question of staffing and funding IYA activities. Resolution 1980/67 of the United Nations Economic and Social Council, which provides detailed guidelines for the conduct of international years, emphasizes (paragraph 21) that:

> "The proclamation of international years and activities connected with them should not lead to a proliferation of costs in the United Nations Secretariat or in the secretariats of other organizations; furthermore, expenditures should normally be met from existing resources in the regular budget."

Paragraph 13 of the same document stresses that in principle, financing should be from voluntary organizations, and that the basic arrangements for financing should be made before the proclamation of the international year.

74. However, in the case of the International Year of Shelter for the Homeless 1987, it was noted that:

> "In view of the wide-ranging nature of the programme of activities planned for the Year, and the need to ensure that support of the centre's secretariat ... does not have a detrimental effect upon the delivery of the regular work programme of the centre, it appears inveitable that some additional but strictly limited resources will be required to provide for substantive secretariat and programme support costs."

75. The extrabudgetary costs were established to amount to $US 4.3 million at 1983 priced for operations and support over the five-year period 1983-1987 (see annex II).

76. There is a clear prima facie case for requesting consideration by the Secretary-General for a limited additional budget item, in view of the very substantial programme of work which the initiating period of IYA will involve. The extent of this will partly depend on decisions made as to which should be the lead agency, and of course, the present financial crisis which the United Nations is facing.

77. As soon as feasible, an international trust fund should be established, and voluntary donations sought for the prepration of activities for IYA.

B. Aims and objectives

1. Programme area

78. This paper recommends that the priority issues for the programme of action during IYA 1991 should be:

(a) The critical review of development strategies and approaches with a view to reconciling those of donors, governments and farmers;

(b) A gradual shift from short-term project-based aid to long-term support for the agricultural sector;

(c) A commitment to long-term research programmes oriented to the needs of small- to medium-sized farmers and herders;

(d) The indigenization of scientific and technological base within Africa for the support of agriculture;

(e) Intensive manpower training primarily within Africa, in broadly defined agricultural support services and management areas;

(f) A radically revised economic environment for the small producer via locally adapted price and marketing policy, and a general alleviation of bottlenecks and scarcities in essential inputs and wage goods;

(g) Substantially increased investment flows into rural transport, small-scale irrigation, groundwater development;

(h) Major attention to the needs of environmental protection, notably soil fertility maintenance, watershed management, forest conservation and expansion; and

(i) Food security provision, through early warning systems, and improved storage and distribution.

2. Themes

79. While these issues may form the basis for elaborating particular programmes, in themselves they are not appropriate as major IYA campaign themes. It is proposed that the central uniting theme be that of mobilizing financial and technological resources for the small peasant farm family, under a slogan such as: "The African peasant farm family to the fore".

80. The purpose here is to display the human, domestic face of agriculture in Africa as a working and living entity, with all its potential for success in the face of admittedly grave problems of under-investment, environmental degradation, population pressure, and insufficient support and technology. This theme will unite a very large number of the various strands mentioned above, and enable a popular identification to be made with the crisis. It should stress the importance of agriculture in the maintenance of a satisfactory standard of livelihood, particularly for the smallest and poorest producers and remote area dwellers. The illustrative components of the campaign - videos, posters, information packs, films, together with such activities as visits and exchanges, farmer festivals and the like - should concentrate on communicating the human face of the problem. The type of programme which might develop activities and measures for this theme would include:

(a) Improved input delivery (rural transport, agencies);

(b) Price and marketing policies;

(c) Small-scale irrigation and groundwater development; and

(d) Research on drought-resistant crops.

81. Subsidiary themes which extend and develop the range of issues identified for priority treatment should perhaps be limited in number, and reflect above all the vision that the crisis in Africa is not insurmountable, provided a concerted long-term effort is made. Such subsidiary themes might include the following:

(a) A new deal for eliminating hunger in Africa;

(i) New financial commitments by major donors;

(ii) Case studies of successful bilateral aid programmes;

(iii) CDA policy review;

(iv) Monitoring programmes for African agricultural sectors.

(b) Protect the land, and protect life:

(i) Land, soil and water management;

(ii) Forest-ecosystem, conservation and management;

(iii) Case studies of successful and unsuccessful conservation and protection measures;

(c) Science for food and agriculture:

(i) Utilizing and developing indigenous knowledge;

(ii) New long-term agricultural research capacity;

(iii) Technology adaptation;

(iv) Collaboration among research institutions.

(d) Developing new skills for a stronger Africa:

(i) Increased manpower training;

(ii) Collaboration among training institutions.

C. Guidelines for organization and action

82. The basic network of institutions is represented in the organizational chart annex I. The key organizations are considered at three levels: national, regional and international.

1. Action at the national level

83. All member nations of the United Nations should be invited to participate in the International Year. Participating members should be invited to establish a trust fund for the receipt of donations towards the International Year both at the official level and also with community and non-governmental organizations. The national co-ordinating body should:

(a) Prepare an agenda for national action in line with the principle and objectives of IYA;

(b) Undertake a thorough review of national ODA towards Africa, and examine the scope for new initiative, particularly as regards the mobilization of additional resources for the agricultural sector;

(c) Invite the active participation of institutions concerned with research and training in tropical agriculture;

(d) Co-ordinate and support the activities of non-governmental agencies engaged in the project and support work for African agriculture; and

(e) Seek sponsorship and other forms of support from voluntary sources.

2. Action at the regional level

84. Action at the regional level, notably multibilateral and inter-State organizations within Africa will have a particularly important role to play for the International Year. There is a danger that the breadth and complexity of the issues across such a diverse continent as Africa will lead to a diffuseness of effort, and even allow potential contributors to claim existing activities as their response to the international mobilization. Accordingly, there should be a clear linkage between regions and programmes, with priority areas for action and the details of implementation elaborated at the regional level. It may be appropriate to invite participating members to link their national activities with a particular regional area of focus, in order to give the campaign immediacy and impact.

85. Subregional liaison committees should be established in each major African zone, whose function will be as follows:

(a) The role of African governments and peoples will be crucial for the success of IYA. They will play a twofold role in increasing domestic resources, and in determining the effective application of these and other resources to agriculture. The decision-making process - involving both State and non-State agencies - which will determine the degree of support which African farm families receive in practice, should be a major target of the campaign. Regional co-operation in such areas as marketing, research, training and transport should also be a major focus;

(b) Consider the zonal priorities within the broad principles of the IYA programme;

(c) Elaborate programmes of activities in detail;

(d) Co-ordinate the activities of external agencies, and arrange for intergovernmental exchanges;

(e) Operate links with supporting participating bodies.

86. The subregional liaison committees may be based at the ECA MULPOCs (Multinational Programming and Operational Centres) as follows:

North Africa	Tangiers
West Africa	Niamey
Central Africa	Gisenyi
West Central Africa	Yaounde
Eastern and Southern Africa	Lusaka

3. Action at the international level

87. The main international organizations are:

(a) Target funding agencies;

(b) United Nations Advisory Committee on International Year for Africa (IYA);

(c) International voluntary organizations;

(d) Other international financial contributors;

(e) United Nations units and organizations;

(f) Designated lead agency;

(g) Support agency;

(h) International secretariat.

88. Target funding from external sources: The IYA campaign has as a major immediate goal the radical increase in funding availability for Africa. The scale of the measures required are set out in the previous section: $US 1.148 billion to $US 2.296 billion per year for national agricultural research systems of which $US 343 to $US 686 million annually would be expected from external sources, 16/ thanks to the international community and its commitments to support and complement the African development efforts. 17/ The campaign should identify the potential sources of these resources and to gear actions in each case. The major targets are:

(a) Major multilateral funding agencies (the IBRD group, UNDP, ADB, EEC, OECD);

(b) Major bilateral donors;

(c) Voluntary, support and community organizations in the developed world.

89. The United Nations Advisory Committee on IYA will take key decisions to establish the basic organizational machinery for IYA and lay down policy guidelines for activities. It will designate the lead and support agencies; the International Trust Fund; and make recommendations on extrabudgetary support. It will evaluate the operations of IYA.

90. The International Trust Fund will act as a repository for international voluntary contributions towards the core support work of the IYA international secretariat and support agency, and will monitor and report on disbursements to the Advisory Committee.

91. International voluntary organizations many of which already play a leading role in development work in Africa, should be involved from the beginning in financing, support and implementation of IYA activities. Together with other voluntary organizations, they should have representation on the International Trust Fund.

92. The United Nations System: Organizations and units of the United Nations system should be individually and collectively requested to co-operate with the designated lead agency in:

(a) Reviewing ODA policy towards Africa;

(b) Examining existing policies, programmes and projects in the area of food and agricultural production in Africa;

(c) Participating in joint programming exercises for the development of research, training and the dissemination of information relating to IYA;

(d) Promoting technical co-operation between developing countries at various levels in supporting the programme of activities for IYA;

(e) Reviewing progress on IYA periodically at inter-agency meetings.

93. The designated lead agency will serve as the intergovernmental body responsible for the co-ordination of activities to be undertaken before the commencement of the International Year. In particular, the lead agency should:

(a) Establish and supervise the operations of the international secretariat;

(b) Identify ways and means of obtaining financial and other support for the activities envisaged;

(c) The lead agency, in close collaboration with the national department of state should establish the instruments for managing and controlling the funds - national and international;

(d) Co-ordinate the activities of sister agencies;

(e) Monitor the state of implementation of the programme of activities on the basis of reports from participating bodies. This should include the issue of periodic reports, and final report which would cover the strategy for Africa agriculture over the long-term; and

(f) Provide support through the regional offices for activities during the celebration of IYA.

94. The support agency should be a regional organization closely concerned with day-to-day operations within Africa. Its main function will be to co-ordinate with the lead agency in the preparation and implementation of the programme of activities, and to provide operational support at the subregional level.

95. The international secretariat will prepare and disseminate information on IYA, including fact-sheets, programme suggestions and press briefing. It will act as a supporting agency for the national co-ordination and international voluntary groups.

VI. CONCLUSION: THE INTERNATIONAL YEAR TO END HUNGER AND POVERTY IN AFRICA

96. The major concern of this document is to propose an International Year to End Hunger and Poverty in Africa through mobilization of financial and technological resources to increase food and agriculture production. This proposal notes that although Africa has immense agricultural potential, it has gradually lost its capacity to feed its growing population. This inability stems from neglect of agriculture and the cummulative inadequacies of policies and institutions over the past two decades. The extractive, urban-biased policies of many African States in post-colonial era have denied agriculture its priority as the motive force for development. The interplay between this misunderstood role of agriculture and other deep-seated predisposing factors - political, social, technical, economic - coupled with natural disasters - have compounded the situation, spawing the present agrarian crisis with concomitant devastating famine, poverty and a deepening food import dependency.

97. One critical cause of this chronic agrarian crisis is the existing technology gap in the African food and agriculture sector. While African governments have retained past emphasis on agricultural research - mostly on export crops, - there is acute underinvestment in basic and adaptive research and technology suited to essential staple food crop and livestock production. Agricultural development has been titled more towards the politically powerful resource-rich farmers high potential regions, than to small poorer farmers and particularly women and depressed to ess

98. In elaborating the proposal, the document advocates for the sustainability of food and agricultural production systems aimed at achieving African agricultural revival, and that will avert possible economic and political disasters on the continent. This calls for a critical review, a rethinking and a reorientation of policies and strategies involving depackaging of African and other experiences. Thus, rather than become preoccupied mostly with the transfer of alien technologies, as is now the case, the challenge lies in a massive and complex task of reorientation, greatly strengthening Africa's agricultural research and production systems and the development of new technologies.

99. It is noted that it will be difficult and costly to bring about this postulated transition in African agricultural recovery for sustained growth and development. However, since the long-term pay-offs far outweigh the cost of waiting or inaction and of potential economic and political catastrophies, this is the time to begin.

100. Therefore, the inescapable conclusion is that African agriculture requires substantially greater financial and technological development support than hitherto from domestic and external sources if this sector is to make the urgent sustained recovery from the present crisis. It is these considerations that underlie the proposals in this document for launching a series of practical remedial measures and plans by all concerned, as part of the International Year to End Hunger and Poverty in Africa.

101. This will require a redefinition and realignment of policies, structures and institutions so as to create the necessary framework for a sustained self-reliant development of the sector. This must be supported by an unflinching political will.

Footnotes

1/ World Bank, Toward Sustained Development in Sub-Saharan Africa: A Joint Programme of Action, 1984.

2/ FAO/UNFPA/IIASA, "Land and Population", paper presented to the twenty-second session of the FAO Conference, Rome, November, 1983.

3/ FAO, The state of food and agriculture 1986; CL 90/2 - sup. 1, November 1986, p.7, para. 30.

4/ Donors meeting on rehabilitation of agriculture in Africa, Rome, 29 March 1985.

5/ DES: Dietary energy supply.

6/ ECA, Situation of food and agriculture in Africa, Addis Ababa, 14 February 1984, table 5, p.10.

7/ ECA, Africa's food and agriculture crisis: prospectives and proposals for 1985 and 1986, 1 April 1985, p.2.

8/ Adopted by the African Heads of State and Government in July 1985.

9/ Adopted by the thirteenth special session of the United Nations General Assembly held in May 1986.

10/ UNDP/FAO National agricultural research, FAO, Rome 1984, p.6.

11/ OAU/ECA, Africa's submission to the special session of the United Nations General Assembly on Africa's economic and social crisis, Addis Ababa, March 1986, pp.63 and 64.

12/ Ibid., pp.63 and 64.

13/ OECD, Twenty-five years of development co-operation: A review. Paris, 1985, p.214.

14/ UNDP/FAO, National agricultural research; Report of an evaluation study in selected countries, Rome, Italy, 1984.

15/ Ibid, p.65, para.8.2.

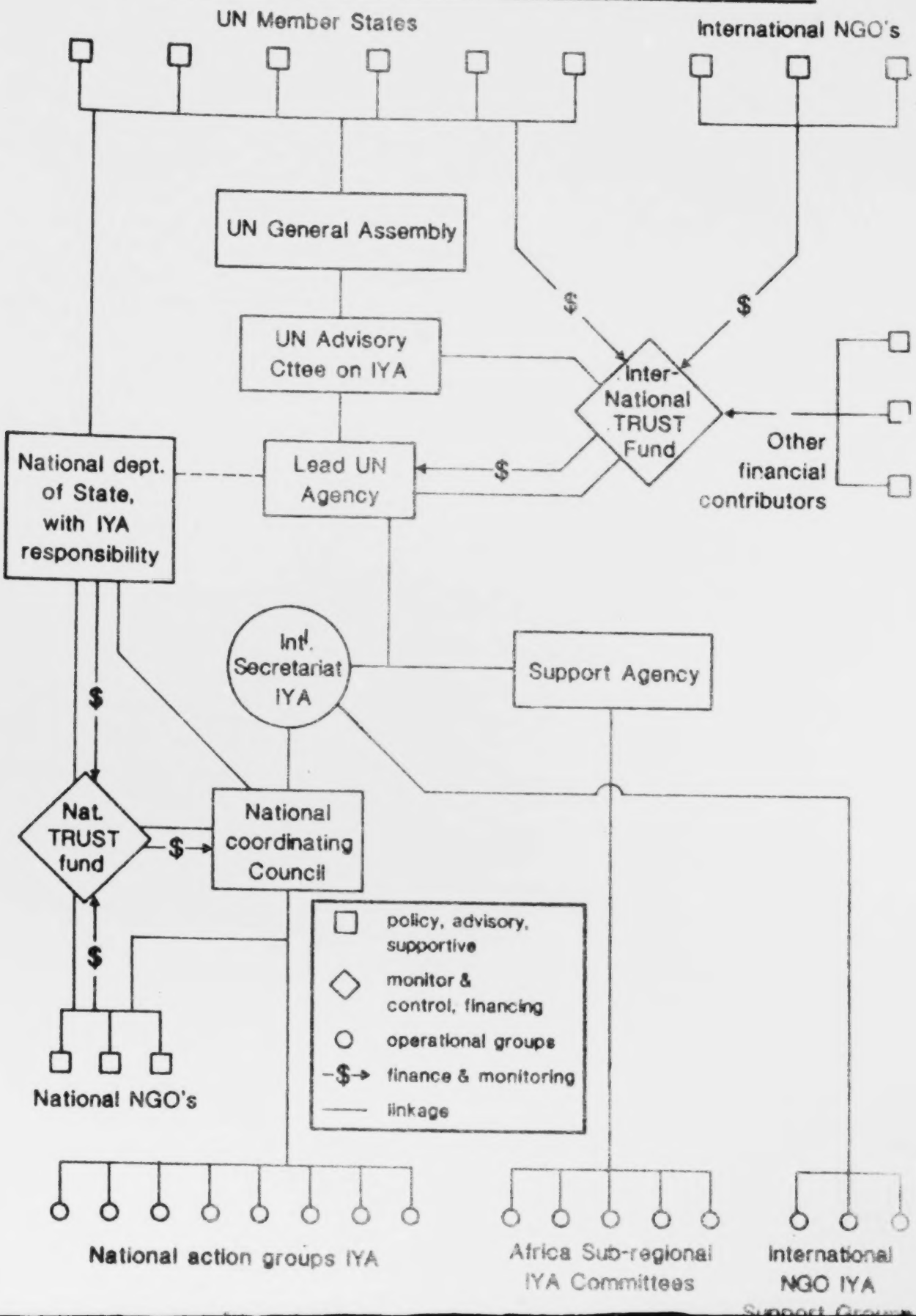
16/ A rate of investment in research of at least 1 per cent of agricultural GDP as also suggested in the UNDP/FAO study and by a SPAAR Working Group* would call for an annual investment of $US 0.7 billion. This estimate is however, considered low as it would result in a shortage of technology (UNDP/FAO, p.65, para. 8.1).

* Guidelines for strengthening national agricultural research systems in sub-Saharan Africa, draft, October 1986, p.11.

17/ For agriculture, the ratio of external resource requirements to total cost in APPER is 0.2985:1. The same ratio is applied in the financing of research.

18/ UNGA, United Nations Programme of Action for African Economic Recovery and Development.

ORGANISATIONAL CHART FOR INTERNATIONAL YEAR 1991



Annex II

Financial requirements for the International Year of Shelter for the Homeless

(All amounts in thousands of US dollars at 1983 rates)

I. Operational programme for the year

	RB a/	XB b/	RB	XB	RB	XB	RB	XB	RB	XB	RB	XB	RB and XB
Regional and experts meetings	-	-	-	205.8	-	102.8	-	226.7	-	-	-	735.1	535.1
Support activities of non-governmental organizations	-	27.5	-	27.5	-	27.5	-	27.5	-	27.5	-	137.5	137.5
Demonstration projects													
(a) Planning and co-ordination	-	126.5	-	193.5	-	183.7	-	174.7	-	166.7	-	845.2	845.2
(b) Direct technical advice assistance	-	231.0	-	432.7	-	444.8	-	258.9	-	71.0	-	1 438.2	1 438.2
Subtotal I	-	385.1	-	859.3	-	758.8	-	685.8	-	265.2	-	2 954.0	2 954.0
Temporary staff	-	44.8	144.8	85.7	144.8	85.7	144.8	85.7	144.8	85.7	578.4	387.8	966.0
Audio-visual training and programme support information	-	42.4	25.0	80.0	-	134.9	-	112.8	25.0	183.7	50.0	534.1	584.1
Travel	-	31.0	-	31.0	-	31.0	-	31.0	-	44.9	-	168.9	168.9
Communications	-	44.0	-	44.0	-	44.0	-	44.0	-	44.0	-	220.0	220.0
Interagency working group meeting	- -		17.1	-	-	-	17.1	-	-	-	34.2	-	34.2
Subtotal II	-	162.2	186.7	221.2	144.8	295.8	161.7	273.3	169.8	358.3	662.6	1 310.8	1 973.2
Grand total	-	547.3	186.7	1 080.5	144.8	1 054.2	161.7	959.1	169.8	623.5	662.6	4 264.8	4 927.2

Source: International Year of Shelter for the Homeless: Report of the Secretary-General (Addendum)

a/ RB = regular budget.

b/ XB = extrabudgetary.